

A NEW SPECIES OF SCORPIONFLY (MECOPTERA: PANORPIDAE)  
FROM NORTH CAROLINA

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*Abstract.*—*Panorpa ensigera*, n. sp., described from the coastal area of North Carolina, is similar to *P. helena* Byers, *P. vernalis* Byers, *P. robusta* Carpenter, *P. rufescens* Rambur, and *P. americana* Swederus, particularly by the presence in males of black setae on the apex of the basistyle.

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A recent collecting trip to the southeastern states yielded several specimens of a scorpionfly that resembles *Panorpa helena* Byers and *Panorpa americana* Swederus in having several large, black bristles at the apex of the basistyles of the male terminalia, but differ in details of the ventral parameres. After examination by George W. Byers, University of Kansas, it has been determined that these specimens represent a new species.

*Panorpa ensigera* Bicha, NEW SPECIES

Figs. 1-8

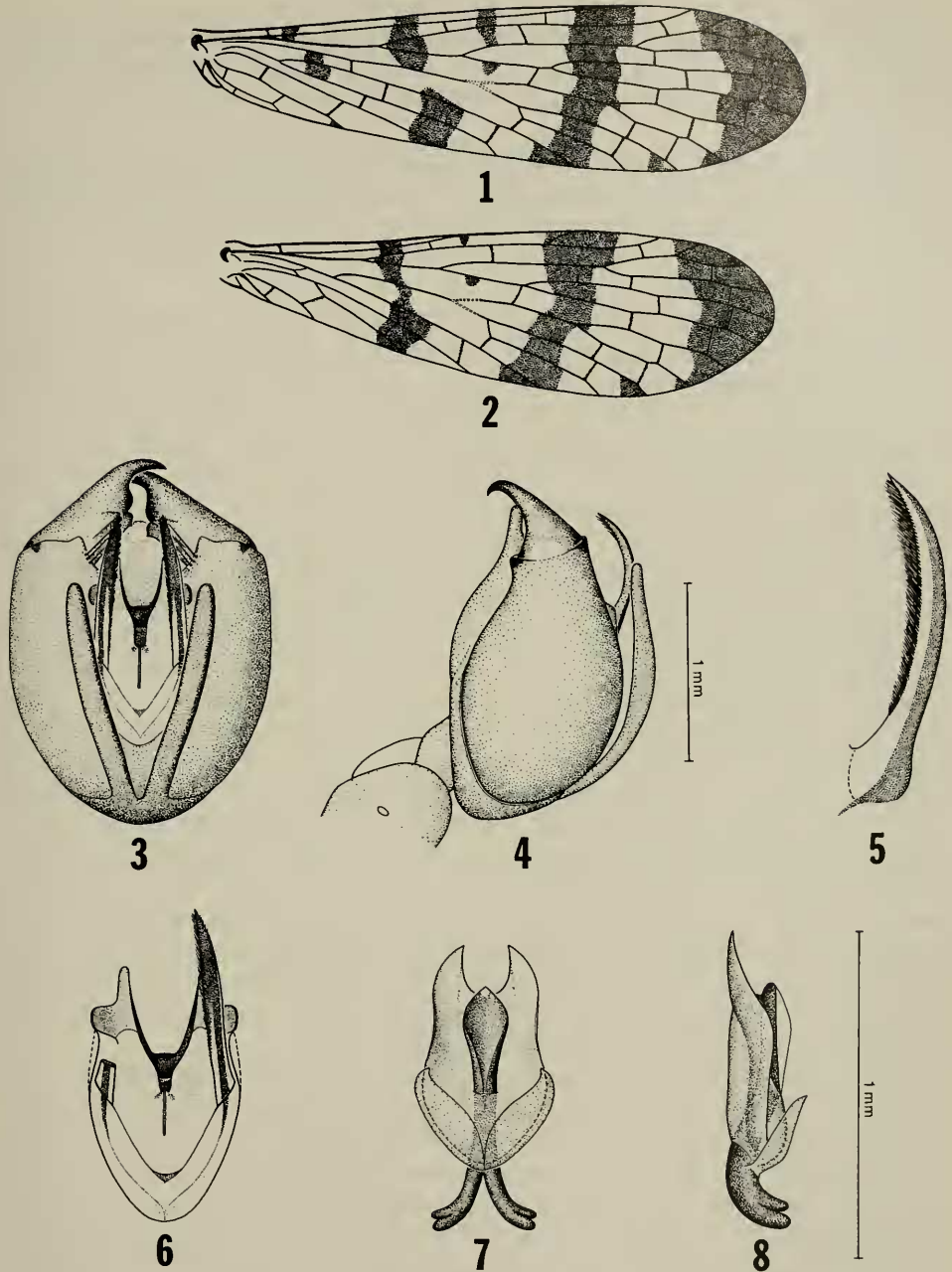
*Description.*—based on 7 ♂, 2 ♀ pinned and 1 ♂, 1 ♀ preserved in alcohol.

*Head:* Yellowish brown to amber, posterior surface of rostrum lighter. Eyes purplish brown. Scape and pedicel orangish brown; flagellum black with 39 flagellomeres.

*Thorax:* Dorsum yellowish orange; pleura yellow. Legs yellow with apical tarsomeres brown.

Forewing length 10.5-11.8 mm. Wing membrane (Fig. 1) strongly tinged with amber, bands and spots dark brown. Stigma beyond pterostigmal band yellowish white. Crossveins margined. Apical band entire. Pterostigmal band usually entire, apical branch of posterior fork reduced to small spot. Two small anterior intermediate spots between pterostigmal and basal bands. Basal band interrupted near midlength in forewing, usually complete but more slender in hindwing (Fig. 2). One marginal and one basal spot present in forewing, both absent in hindwing.

*Male abdomen:* Terga 2-5 pale yellow to light yellowish brown. Terga 6-9 orange. Pleura white. Notal organ on terga 3 and 4 small. Anal horn present on tergum 6. Genital bulb (Fig. 3) yellowish orange. Hypovalues thin, nearly uniform in width, fused near base of basistyles, extending approximately to base of dististyles. Tergum 9 deeply emarginate apically, ventral surface with protrusible membrane which often protrudes dorsally between dististyles. Dististyles yellowish brown, apices amber to dark brown, falcate, basal cup shallow with dark brown lip. Basistyle with 3 long, black bristles at apex (Fig. 3) extending posteriorly towards basal cups of dististyles. Ventral parameres (Figs. 3-6) in ventral view thin, unbranched, polished amber with white lateral margin, extending slightly



Figs. 1-8. *Panorpa ensigera*. 1, Right forewing, 2, Hindwing. 3, Male genital bulb, ventral aspect. 4, Same, left lateral aspect. 5, Right ventral paramere, mesolateral aspect, slightly enlarged scale. 6, Aedeagus, left ventral paramere removed, ventral aspect, slightly enlarged scale. 7, Female genital plate, ventral aspect. 8, Same, left lateral aspect.

beyond bases of dististyles, reduced at apex to dagger-like point; mesal margin bearing fine setae on apical 4/5; in lateral view, ventral parameres extend outwards (ventrad) from genital bulb. Dorsal parameres (Fig. 6) nearly transparent apically, brown basally, thin, extending slightly beyond bases of dististyles. Ventral valves of aedeagus white.

*Female abdomen:* Coloration similar to that of male. Genital plate (Figs. 7, 8) 0.88 mm in length. Distal and basal plates fused with slight medial constriction; distal plate concave, deeply emarginate apically. Basal plate rounded basally. Accessory plate covering basal  $\frac{2}{3}$  of basal plate. Spermethecal apodemes diverging at basal  $\frac{1}{3}$  of basal plate.

*Types.*—Holotype,  $\delta$ , North Carolina, Richmond Co., 4 mi. S. of Pinebluff, 16 September 1980, W. Bicha; allotype,  $\text{♀}$ , and 2  $\delta$  paratypes 12 June 1981, W. Bicha; 3  $\delta$  and 2  $\text{♀}$  paratypes 16 September 1980. One  $\delta$ , and 1  $\text{♀}$  paratypes, North Carolina, Moore Co.,  $\frac{1}{2}$  mi. S. of Vass, 16 September 1980, W. Bicha. Holotype and allotype deposited in Snow Entomological Museum, Lawrence, Kansas; paratypes in Illinois Natural History Survey, Champaign, Illinois, and collection of author.

*Remarks.*—*Panorpa ensigera* resembles *P. americana*, *P. vernalis* Byers, *P. robusta* Carpenter, *P. rufescens* Rambur, and *P. helena* in having long black bristles at the apices of the basistyles of the male (Byers, 1962, 1973). The forewings of *P. ensigera* differ from those of *P. vernalis* in having distinct dark bands, from those of *P. americana* (Carpenter, 1931: Fig. 79, Pl. 8) in having the marginal and basal spots separate rather than fused, and from those of *P. helena* in having a definite marginal spot. The ventral parameres of *P. ensigera* differ from those of other known species of *Panorpa* by distinctively protruding outward (ventrad) from the genital bulb (Fig. 4), rather than against the ventral surface of the genital bulb as *P. helena*, *P. robusta*, and *P. rufescens*. In addition *P. ensigera* has no tuft of setae on the lateral apex of each ventral paramere, whereas, *P. robusta* has a distinct tuft. In females, the wing patterns of *P. robusta*, *P. rufescens*, and sometimes *P. helena* are similar to that of *P. ensigera*, but the genital plate of *P. ensigera* (Fig. 7, 8) appears unique among North American panorpids by the presence of two longitudinal concavities in the distal plate and distinctive accessory plate. The genital plates of *P. robusta* and *P. rufescens* are not constricted medially as in *P. ensigera*, while *P. helena* generally has a shield-shaped genital plate (Thornhill and Johnson, 1974: Figs. 34, 36, p. 42).

At the type-locality, *P. ensigera* was collected from blackberry (*Rubus* sp.), pokeweed (*Phytolacca americana*), and tulip tree seedlings (*Liriodendron tulipifera*) in a roadside ditch, two or three feet above ground level, in direct sunlight. Approximately 30 feet away was a wooded area of gum, oaks, tulip tree, and pine. No individuals were found in or along the edges of the woods, which is a more typical habitat for scorpionflies. *Panorpa ensigera* was seen feeding on fermenting blackberries at one location and pokeweed berries at another. When captured, most individuals regurgitated a reddish juice which stained some of the specimens.

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